

PATENT CLAIMS

1. A control method for the modulation of the torque of piston combustion engine that has a compression chamber (6) of variable volume and operable inlet valves (3), **characterized** in that the torque requested for a predetermined operative condition is obtained through a selection of the volume of the compression chamber (6) combined with a selection of the time of opening and the time of closure of the inlet valves (3) combined with a selection of the frequency with which power strokes are performed.
2. A control method according to patent claim 1, **characterized** in that
- at maximum load, the maximum compression chamber volume is applied,
 - upon reduced load, the compression chamber volume is reduced and the closure of the inlet valves (3) is performed earlier, and
 - upon a further reduction of the load, the selection of the frequency of power strokes is performed.
3. A control method according to patent claims 1 or 2, **characterized** in that the selection of the frequency of power strokes is performed from idling up to 50% of maximum load.
4. A control method according to anyone of the patent claims 1-3, **characterized** in that the outlet valves are operable and that the volume of the compression chamber (6) is selected in combination with a selection of the times for opening and closure of the inlet valves (3) as well as the outlet valves (4) and in combination with the selection of the frequency by which the power strokes are performed.

5. A control method according to anyone of claims 1-4, **characterized** in that the engine has a plurality of cylinders (1) and that a different frequency of power strokes are chosen for different cylinders (1).
- 5 6. A control method according to anyone of claims 1-5, **characterized** in that the power strokes are performed with early closure of the inlet valves (3).
7. A control method according to anyone of claims 4-6, **characterized**
10 in that the power strokes are performed with delayed opening of the outlet valves (4).
8. A control method according to anyone of claims 1-7, **characterized** in that the volume of the compression chamber (6) is controlled to be
15 20% - 80% of the maximum volume thereof as the frequency of power strokes is selected.
9. A control method according to anyone of claims 1-7, **characterized** in that the volume of the compression chamber (6) is 30%- 50% of
20 the maximum volume thereof as the frequency of power strokes is selected.
10. A control method according to anyone of claims 1-9, **characterized** in that, at each power stroke, upon a predetermined
25 number of revolutions per minute, which is independent of the torque, generally equal masses of air and fuel, and generally the same proportion of air and fuel is ignited as in the other power strokes.
11. A control method according to anyone of claims 4-10, **characterized**
30 in that 2-stroke cycles or 4-stroke cycles are selected upon a bases of the required torque, and that the power strokes are performed in 2-stroke cycles as well as 4-stroke cycles.

12. A control method according to patent claim 1, **characterized** in that comprises a control system (8) with a computer program that, by signal control upon basis of a torque request from driver, selects frequency of power strokes, valve times, lifting of the valve, the volume of the compression chamber (6) and operation with 2-stroke cycles or 4-stroke cycles.